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RESEARCH BRIEF

2015 Health Related Behaviors Survey

Sexual Orientation, Transgender Identity, and Health Among U.S. Active-Duty Service Members

The Health Related Behaviors Survey (HRBS) is the U.S. Department of Defense (DoD)'s flagship survey for understanding the health, health-related behaviors, and well-being of service members. Fielded periodically for more than 30 years, the HRBS includes content areas—such as substance use, mental and physical health, sexual behavior, and postdeployment problems—that may affect force readiness or the ability to meet the demands of military life. The Defense Health Agency asked the RAND Corporation to revise and field the 2015 HRBS.

In this brief, we review results describing sexual orientation, transgender identity, and how they are related to health. The 2015 HRBS provides the first direct estimate of the percentage of service personnel who identify as lesbian, gay, bisexual, or transgender (LGBT).[1] It is also, to our knowledge, the first to examine the health-related behavior or health status of LGBT service members, a fact made even more important by the 2010 DoD policy changes allowing for open LGBT service in the military.[2]

Research on the general U.S. population suggests that the health issues and needs of LGBT individuals may differ somewhat from the needs of others. Smoking, alcohol, and other drug use are greater in this group than in the rest of the population, as are some mental health problems and sexual and reproductive health issues. LGBT individuals may experience overweight and obesity more often than others and may access routine health care less often. Such disparities could affect readiness among LGBT service members.

Sexual Orientation and Transgender Identity

Sexual orientation can be measured as (1) relative attraction to same-sex individuals, (2) sexual activity with same-sex individuals, and (3) sexual identity (i.e., lesbian, gay, or bisexual [LGB]). The 2015 HRBS assessed sexual orientation

Methods:

RAND fielded the 2015 HRBS among active-duty U.S. military service members in the Air Force, Army, Marine Corps, Navy, and Coast Guard between November 2015 and April 2016. The survey used a random sampling strategy, stratified by service branch, pay grade, and gender (as obtained from Defense Manpower Data Center records). Respondents completed the anonymous survey online, with a response rate of 8.6 percent. This resulted in 16,699 usable surveys (of 201,990 invited to participate).[3] For some analyses, the number of usable surveys may differ because of differences in nonresponse for individual items. To represent the active-duty population, we weighted responses to account for the oversampling of service members in certain strata. In this research brief, we report point estimates and 95-percent confidence intervals (CIs).[4]

We tested differences in each outcome across levels of key factors or by subgroups—service branch, pay grade, gender, age group, race/ethnicity, and education level—using a two-stage procedure based on (1) a Rao-Scott chi-square test for overall differences across levels within a single factor and, if the overall test was statistically significant, (2) two-sample *t*-tests that explore all possible pairwise comparisons between levels of the factors (e.g., junior officers compared with noncommissioned senior officers). Readers interested in these differences should consult the full 2015 HRBS final report at www.rand.org/t/RR1695.

This brief is one of seven, each corresponding to a different chapter in the full report. An eighth brief summarizes the entire report.

[1] As this brief was in the final stages of production, findings from the 2016 Workplace and Gender Relations Survey of Active Duty Members were released, indicating that 12 percent of female service members and 3 percent of male service members identify as LGBT.
[2] On July 26, 2017, as this brief was in the final stages of production, President Donald Trump announced intentions to prohibit transgender individuals from serving in the military.
[3] When calculating response rates, we excluded service members whom we were unable to contact because of incorrect email or mailing addresses. The number we were unable to contact was 6,770, or 3.4 percent of the sample.
[4] CIs provide a range in which we expect the true population value to fall. They account for sampling variability when calculating point estimates but do not account for problems with question wording, response bias, or other methodological issues that, if present in the HRBS, might bias point estimates.

in all of these ways. The survey also assessed transgender identity, or when a person experiences a different gender identity from their sex at birth. Table 1 summarizes overall estimates of sexual orientation and transgender identity for men and women in the HRBS.

Table 1
Sexual Orientation and Transgender Identity

	Men[a]	Women[a]	Overall
Sexual attraction			
Only attracted to men	1.7% (1.1–2.3)	68.2% (66.2–70.2)	
Mostly attracted to men	0.5% (0.2–0.8)	16.1% (14.6–17.7)	
Equally attracted to men and women	1.2% (0.7–1.8)	5.2% (4.2–6.3)	
Mostly attracted to women	4.3% (3.4–5.1)	3.2% (2.4–4.0)	
Only attracted to women	90.1% (88.8–91.4)	4.4% (3.5–5.3)	
Not attracted to either men or women	0.7% (0.3–1.0)	1.3% (0.7–1.9)	
Not sure	1.5% (0.9–2.1)	1.7% (1.1–2.3)	
Sexual activity			
Sex with one or more same-sex partners in the past 12 months	3.3% (2.6–4.1)	9.4% (8.1–10.6)	
Sexual identity			
Gay or lesbian	1.9% (1.3–2.5)	7.0% (5.8–8.1)	
Bisexual	2.0% (1.4–2.6)	9.1% (7.8–10.4)	
Total LGB[b]			5.8% (5.0–6.6)
Transgender identity			
Transgender	0.5% (0.2–0.8)	1.2% (0.6–1.7)	
Total transgender[c]			0.6% (0.3–0.9)
Total LGBT identity[d]			6.1% (5.3–6.9)

NOTE: All data are weighted. 95-percent CIs are presented in parentheses. Percentages are reported for the sample overall, not among only LGBT respondents.
[a] As with all 2015 HRBS data, service members are categorized by gender as self-reported in the survey.
[b] If all respondents who declined to answer this item (0.3 percent) were LGB, the overall percentage would be 6.0 percent.
[c] If all respondents who declined to answer this item (0.4 percent) were transgender, the overall percentage would be 1.0 percent. If weights were calculated based on reported gender instead of the gender in Defense Manpower Data Center records, the overall percentage would be 1.1 percent.
[d] The total LGBT percentage does not equal a simple sum of the LGB and the transgender percentages because of overlap in the two groups (n = 40) and some differences in item-level nonresponse across the two items.

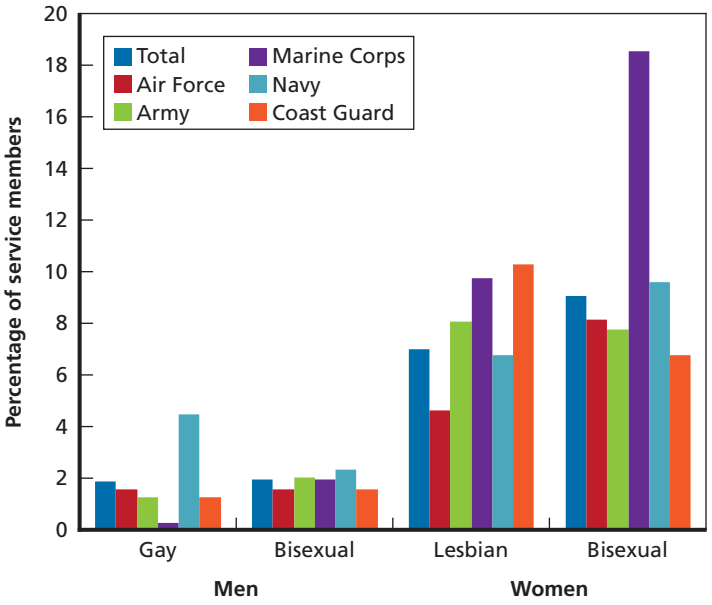
Overall, as Table 1 shows, 5.8 percent (CI: 5.0–6.6) of HRBS respondents identified as LGB. This estimate falls between estimates for U.S. adults aged 18–64 years and for U.S. high school students, which is not surprising given the age profile of the military.

Figure 1 summarizes the percentages of gay and bisexual men and lesbian and bisexual women, by service branch. A significantly larger percentage of Navy men identified as gay than did men in any other service branch, and there were no statistically significant differences by service in the percentage of men identifying as bisexual. The percentage of women who identified as lesbian was significantly lower in the Air Force than in all other services except the Navy, and the percentage of women who were bisexual was significantly higher in the Marine Corps than in all other services.

Among HRBS respondents, 0.6 percent (CI: 0.3–0.9) identified as transgender. The most-recent estimate in the U.S. adult population also found that 0.6 percent (credible interval: 0.4–1.0[5]) identified as transgender.

Altogether, 6.1 percent (CI: 5.3–6.9) of service members identified as LGBT. As Table 2 shows, LGBT identity was higher among personnel in the Navy than in other services and among junior enlisted personnel than other pay grades. Almost four times as many service members who reported being female identified as LGBT than those who reported being male.

Figure 1
Lesbian, Gay, and Bisexual Identity, by Service Branch



[5] The interpretation of a credible interval differs from that of a CI. In this context, the credible interval indicates that there is a 95-percent probability that the true percentage of service members who are transgender lies between 0.4 and 1.0.

Table 2
LGBT Identity, by Subgroup

	Identified as LGBT
Total	6.1% (5.3–6.9)
Service branch	
Air Force	5.3% (4.3–6.3)
Army	5.5% (4.0–6.9)
Marine Corps	4.4% (3.0–5.8)
Navy	9.1% (7.0–11.2)
Coast Guard	5.2% (4.4–6.0)
Pay grade	
E1–E4	8.4% (6.8–10.0)
E5–E6	5.2% (4.0–6.3)
E7–E9	3.0% (2.1–3.9)
W1–W5	2.4% (1.2–3.6)
O1–O3	4.6% (3.6–5.6)
O4–O10	2.7% (1.9–3.5)
Gender	
Male	4.2% (3.3–5.1)
Female	16.6% (14.9–18.3)

NOTE: All data are weighted. 95-percent CIs are presented in parentheses.

LGBT Health

LGBT respondents were more likely to report several adverse health behaviors and some worse health outcomes than non-LGBT service members. We compared the two groups on a wide variety of measures where prior studies of the general population have previously shown adverse behaviors or outcomes for LGBT individuals overall or the subgroups this category encompasses (Table 3). Compared with other personnel, LGBT service members were

- equally likely to have a routine medical checkup in the past year
- less likely to be overweight or obese
- more likely to report binge drinking but equally likely to report heavy drinking in the past month
- more likely to be current cigarette smokers
- more likely to report symptoms of moderate or severe depression but less likely to report symptoms of mild depression
- more likely to report non-suicidal self-injury, suicide ideation, and a suicide attempt
- more likely to have ever experienced physical abuse or unwanted sexual contact
- more likely to have had unprotected sex with a new partner in the past year, as well as to have had more than one sex partner in the past year
- more likely to have had a sexually transmitted infection in the past year
- more likely to have not used contraception during the most-recent vaginal sex (in the past year).

Table 3
Health-Related Behaviors and Outcomes, by LGBT Status

	LGBT	Non-LGBT
Routine medical checkup in the past year	81.7%	81.4%
Overweight or obese	54.2%	67.0%
Binge drinking in the past month	37.6%	29.3%
Heavy drinking in the past month	5.6%	5.2%
Current cigarette smoker	24.8%	16.0%
Minimal or mild depression	73.1%	82.8%
Moderate depression	13.2%	8.5%
Severe depression	13.7%	8.8%
Lifetime non-suicidal self-injury	26.5%	10.3%
Lifetime suicide ideation	32.7%	17.1%
Suicide ideation in the past year	15.3%	5.8%
Lifetime suicide attempt	13.0%	4.6%
Suicide attempt in the past year	4.8%	1.2%
Lifetime unwanted sexual contact	39.9%	15.4%
Lifetime physical abuse	21.4%	12.4%
Sex with a new partner without a condom in past 12 months	42.4%	35.6%
More than one sex partner in the past year	40.2%	17.7%
Sexually transmitted infection in the past year	7.4%	1.4%
HIV test in the past year	75.7%	73.2%
No birth control during the most-recent vaginal sex (within the past year)	31.5%	21.6%
Unintended pregnancy in the past year	1.6%	2.5%

NOTE: All data are weighted.

Conclusions and Policy Implications

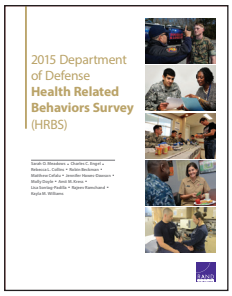
While LGBT personnel obtained routine medical care in percentages similar to non-LGBT personnel, they reported more smoking, binge drinking, risky sexual behavior, and adverse sexual health outcomes. The percentages of LGBT personnel experiencing mental health issues and those with a history of physical abuse and sexual assault were particularly high. These observed differences were similar to those observed for LGBT people in the general U.S. population.

Although these individuals are a small portion of the force, these disparities warrant close attention and tracking by DoD and the Coast Guard so that the specific needs of this subgroup can be addressed. This is particularly important for the Navy, which has the highest percentage of gay men serving and of LGBT service members overall, and in the Marine Corps, which has the highest percentage of bisexual women serving.

Policies that enhance, for example, efforts to prevent substance use and sexual risk behaviors may address LGBT health disparities. Although one option is to target the LGBT population with clinical and population efforts, such an approach may stigmatize LGBT service members. Therefore, it may be best to apply these efforts equally across the military, which could lead to broader population benefits.

Limitations

HRBS response rates were lower in 2015 than in prior iterations of the survey. Low response rates do not automatically mean that the results are biased, but they do increase the likelihood that service members who responded differ qualitatively from those who did not. Those differences, then, could bias our estimates of health and health-related behavior; however, it is impossible to know whether the potential bias would result in better or worse outcomes than those observed in the data. Thus, the results of this survey should be interpreted cautiously and in conjunction with other existing data. In addition, comparing the HRBS with other civilian populations (e.g., all U.S. adults) may be difficult to interpret because of both observed (e.g., demographic) and unobserved differences between the two populations. Finally, because we altered the wording of some questions in the 2015 HRBS, the results presented in this brief may not always be comparable to prior versions of the HRBS.



This brief describes research done in the Forces and Resources Policy Center of the RAND National Defense Research Institute and documented in *2015 Department of Defense Health Related Behaviors Survey (HRBS) of Active-Duty Service Members: Final Report*, by Sarah O. Meadows, Charles C. Engel, Rebecca L. Collins, Robin Beckman, Matthew Cefalu, Jennifer Hawes-Dawson, Molly Doyle, Amii M. Kress, Lisa Sontag-Padilla, Rajeev Ramchand, and Kayla M. Williams, RR-1695-OSD (available at www.rand.org/t/RR1695), 2018. To view this brief online, visit www.rand.org/t/RB9955z6. The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors. **RAND**® is a registered trademark. © RAND 2018

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